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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/008,613	11/08/2001	Matthew D. Pierce	RSM014001	3742

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EXAMINER	
NEWLIN, TIMOTHY R	
ART UNIT	PAPER NUMBER
2424	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/008,613	PIERCE ET AL.	
	Examiner	Art Unit	
	Timothy R. Newlin	2424	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 September 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-59* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-59* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant argues that Engelbrecht does not disclose the use of a clock offset of the mobile unit, but only teaches a time offset for each station. Examiner disagrees. Engelbrecht states that in one method, the times of reception may be measured "relative to a received TV station signal." **[col. 3, 11-16]**. In that case, the target receiver disregards its own internal reference clock 10R and instead adopts the clock (i.e. synchronizing signals) of the reference station as its own. In other words, the clock offset of the mobile device is *defined as* the clock offset between the reference station and another station. **[col. 2, 56-61]**. Since these offsets are subsequently used to calculate the actual propagation delay, pseudo-ranges do "represent" the clock offset of the mobile device as claimed (in addition to the propagation delay) **[col. 3, 44-62]**.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hornfeldt et al., US 6,006,097 in view of Suman et al., US 6,028,537, and further in view of Stenberg, US 2002/0021187 and Engelbrecht et al, US 5,510,801.

3. Regarding claims 1, 13, 19, 32, 37, 49, Hornfeldt discloses a method comprising:

accessing a location of the device, the location determined from pseudo-ranges between the device and a plurality of transmitters, the pseudo- ranges calculated from broadcast signals received by the device from the transmitters **[Figs. 2, 3 and 6, cols. 4-6, 45-3; col. 7, 17-39]**.

Hornfeldt does not teach providing a service at the location of the device. Suman does disclose providing a physical service at the location of a device **[e.g. providing roadside assistance, col. 15, 55-63; locking/unlocking doors or rolling up windows, cols. 15-16, 66-8, col. 49, 49-56]**. These services are provided based on the location of a mobile device, which is determined using a navigation module such as a GPS **[cols. 9-10, 65-4; col. 11, 8-13]**. Suman also utilizes a cellular network having a plurality of base stations **[col. 6, 4-9]**. Although they are not used for positioning per se, the base stations are described as transmitting and receiving signals to the mobile device. Thus it would have been obvious to one of ordinary skill that the positioning function of Hornfeldt could be used to provide location based services as disclosed in Suman, using terrestrial, cellular base stations rather than a more costly GPS unit. Neither Hornfeldt nor Suman teach the use of DTV signals. However, as described in Stenberg, DTV transmission was being added to existing antenna towers at the time of

invention, in part to comply with federal mandates without building additional towers **[paras. 3-4]**. Since DTV signals were available in the same configuration as cell towers (e.g. multiple terrestrial locations), it would have been obvious to one skilled in the art of RF communications that DTV signals could be used to perform position triangulation as disclosed by Hornfeldt. Merely using a new signal type in order to perform the same function does not yield unpredictable results, but rather would be readily predicted given the disclosure of Hornfeldt. Furthermore, at the time of invention there was knowledge in the art that TV signals could be effectively used to calculate position. Englebrecht, for example, gives several benefits of using television signals for this purpose **[col. 1]**.

With respect to claim 37, the Suman teaches a system wherein the means for determining the location are incorporated into the device **[GPS module 38, Fig. 3]**.

Hornfeldt does use the time difference between transmission and reception of a signal, but does not rely on a clock offset since the system measures a return delay. Engelbrecht teaches the use of a clock offset in a television signal positioning system to calculate the location of a receiver **[col. 3, 44-62; cols. 2-3, ll. 56-3; col. 4, 53-62; col. 5, 59-65]**. Given the parallel objective of Hornfeldt and Engelbrecht to calculate receiver position from remote transmissions, it would have been obvious to one of ordinary skill that position may be calculated from a single delay instead of round trip, provided a clock offset is used to prevent drift as taught in Engelbrecht.

4. Regarding claims 2 and 50, Suman discloses a method wherein the physical service comprises emergency roadside assistance **[col. 15, 55-63]**.

5. Regarding claims 3, 51, and 52, Suman discloses a method wherein the physical service comprises an E-911 service **[cols. 12-13, 51-31]**.

6. Regarding claims 4, 33, 43, and 55, Suman discloses a method wherein the device is located in one of a plurality of geographic domains and a quality of the physical service depends on which geographic domain the device is located **[cols. 14-15, 48-6; col. 33, 23-47]**.

7. Regarding claims 5, 16, and 34, Suman discloses a method wherein the device is a stationary device **[e.g., some services are specifically directed towards a parked, i.e. stationary vehicle, col. 49, 9-56]**.

8. Regarding claim 6, Suman discloses a method wherein providing the physical service comprises performing the physical service at the location **[e.g., ambulance performs emergency first aid at accident scene, col. 13, 19-31; tow operator arrives at scene of breakdown, col. 15, 55-63]**.

9. Regarding claims 7, 24, 41, and 53, Suman discloses a method wherein providing the physical service comprises: transmitting a key code to the device, the key code authorizing provision of the physical service at the location **[e.g., a flag may be**

transmitted to the mobile device, authorizing (or prohibiting) certain physical services such as automatic door locking, Fig. 49A, col. 44, 49-62].

10. Regarding claims 8, 25, 42, and 54, Suman discloses a method wherein providing the physical service comprises contacting a local service provider of the physical service and authorizing the local service provider to provide the physical service at the location **[the system may summon a local tow truck by contacting a nearby central service center and requesting (i.e. authorizing) roadside assistance, col. 13, 32-44]**.

11. Regarding claims 9 and 26, Suman discloses a method wherein the device is located in one of a plurality of geographic domains and the local service provider depends on in which geographic domain the device is located **[col. 13, 32-44; in the case of a stolen vehicle, police in the current vicinity of the vehicle can provide recovery, cols. 13-14, 65-6]**.

12. Regarding claims 10, 29, and 46, Stenberg discloses DTV signals but not ATSC specifically. Official notice is taken that at the time of invention ATSC was a well-known standard for digital television signals in North America. One of ordinary skill in the broadcasting field would have known that the DTV signal disclosed in Stenberg could have been in ATSC format.

13. Regarding claims 11, 30, and 47, Stenberg discloses DTV signals but not DVB-T specifically. Official notice is taken that at the time of invention DVB-T was a well-known standard for digital television signals in Europe. One of ordinary skill in the broadcasting field would have known that the DTV signal disclosed in Stenberg could have been in DVB-T format.

14. Regarding claims 12, 31, and 48, Stenberg discloses DTV signals but not ISTB-T specifically. Official notice is taken that at the time of invention ISTB-T was a well-known standard for digital television signals in Japan and parts of South America. One of ordinary skill in the broadcasting field would have known that the DTV signal disclosed in Stenberg could have been in ISTB-T format.

15. Regarding claims 14, 15, 18, 36, and 57, Suman discloses a method wherein providing the service comprises providing information according to the location of the device **[col. 14, 48-63, col. 33, 4-48]**. With respect to claims 36 and 57, the information is provided on the integrated device display **[e.g. display 619, Fig. 42]**

16. Regarding claims 17 and 35, Suman discloses a method wherein the service is provided to a party other than a user of the device **[other parties may include the police or a friend or family member, cols. 13-14, 55-21]**.

17. Regarding claims 20 and 38, Hornfeldt discloses a method wherein accessing the location of the device comprises the device receiving the location from a location server **[service node 102 acts as a server, transmitting location data to the requester, Figs. 2 and 3, col. 4, 32-65]**. The DTV portion has been addressed above in the rejection of claim 1.

18. Regarding claims 21 and 39, Suman discloses a method wherein providing the service comprises a service provider system providing the service **[col. 36, 25-28]**.

19. Regarding claims 22, 23, and 40, Suman discloses a method wherein accessing the location of the device comprises the service provider system receiving the location from the device **[e.g., col. 13, 55-65]**. The server language is addressed in connection with claim 20 above, and the DTV signal is addressed in the rejection of claim 1 above.

20. Regarding claims 27 and 44, Suman discloses a method wherein provision of the service occurs automatically without an explicit request by a user of the device **[col. 13, 27-31, col. 49, 49-62]**.

21. Regarding claims 28 and 45, Suman discloses a method further comprising: receiving a request for the service and providing the service only in response to such a request **[col. 14, 48-60]**.

22. Regarding claim 56, Hornfeldt discloses a system for providing a service based on a location of a device, the system comprising:

a device for receiving broadcast DTV signals from a plurality of DTV transmitters and calculating pseudo-ranges from the received DTV signals **[Figs. 2, 3 and 6, cols. 4-6, 45-3; col. 7, 17-39]**.

a location server for determining a location of the device from the pseudo-ranges **[service node 102 acts as a server, transmitting location data to the requester, Figs. 2 and 3, col. 4, 32-65]**; and

Hornfeldt does not teach providing a service at the location of the device. Suman does disclose a service provider providing a service according to the location of a device **[e.g. providing roadside assistance, col. 15, 55-63; locking/unlocking doors or rolling up windows, cols. 15-16, 66-8, col. 49, 49-56]**. These services are provided based on the location of a mobile device, which is determined using a navigation module such as a GPS **[cols. 9-10, 65-4; col. 11, 8-13]**. Suman also utilizes a cellular network having a plurality of base stations **[col. 6, 4-9]**. Although they are not used for positioning per se, the base stations are described as transmitting and receiving signals to the mobile device. Thus it would have been obvious to one of ordinary skill that the positioning function of Hornfeldt could be used to provide location based services as disclosed in Suman, using terrestrial, cellular base stations rather than a more costly GPS unit.

Neither Hornfeldt nor Suman teach the use of DTV signals. However, as described in Stenberg, DTV transmission was being added to existing antenna towers

at the time of invention, in part to comply with federal mandates without building additional towers **[paras. 3-4]**. Since DTV signals were available in the same configuration as cell towers (e.g. multiple terrestrial locations), it would have been obvious to one skilled in the art of RF communications that DTV signals could be used to perform position triangulation as disclosed by Hornfeldt. Merely using a new signal type in order to perform the same function does not yield unpredictable results, but rather would be readily predicted given the disclosure of Hornfeldt. Furthermore, at the time of invention there was knowledge in the art that TV signals could be effectively used to calculate position. Englebrecht, for example, gives several benefits of using television signals for this purpose **[col. 1]**.

With respect to claim 37, the Suman teaches a system wherein the means for determining the location are incorporated into the device **[GPS module 38, Fig. 3]**.

Hornfeldt does use the time difference between transmission and reception of a signal, but does not rely on a clock offset since the system measures a return delay. Engelbrecht teaches the use of a clock offset in a television signal positioning system to calculate the location of a receiver **[cols. 2-3, ll. 56-3; col. 4, 53-62; col. 5, 59-65]**. Given the parallel objective of Hornfeldt and Engelbrecht to calculate receiver position from remote transmissions, it would have been obvious to one of ordinary skill that position may be calculated from a single delay instead of round trip, provided a clock offset is used to prevent drift as taught in Engelbrecht.

23. Regarding claims 58 and 59, Hornfeldt discloses a method wherein the device serves as the location server by determining the location from the pseudo-ranges, and the device serves as the service provider system by providing the service **[device itself can provide the location to, e.g., an ambulance service, col. 13, 22-28]**.

The DTV signal is addressed in the rejection of claim 1 above.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Both Hurd, US 4,578,678 and Dempster et al., US 5,459,473 are examples of prior art that teach the use of a mobile device clock offset in a position determination system.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy R. Newlin whose telephone number is (571) 270-3015. The examiner can normally be reached on M-F, 8-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on (571) 272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher Kelley/
Supervisory Patent Examiner, Art Unit 2424

TRN